

# NEW PRODUCT NEWS

## DRILL-RUSH



### New Head Geometry for Flat Bottom Hole-Making



# DRILLRUSH

## New head geometry for flat bottom hole-making

### FEATURES

- Suitable for high precision machining of flat surfaces and excellent chip breaking capability
- Improved economy on flat bottom hole applications credit to reducing a two step process to one
- New geometry is compatible with current DRILLRUSH bodies in the same size
- Flat drilling recommended cutting conditions are the same as standard head-changeable drilling
- TT9080 grade PVD multi-layered coating provides high wear resistance, chipping resistance and prolonged tool life

TaeguTec has extended the application range of the successful DRILLRUSH drilling line by introducing a flat-face geometry head for flat bottom machining in a diameter range of 8.0 to 25.5 mm.

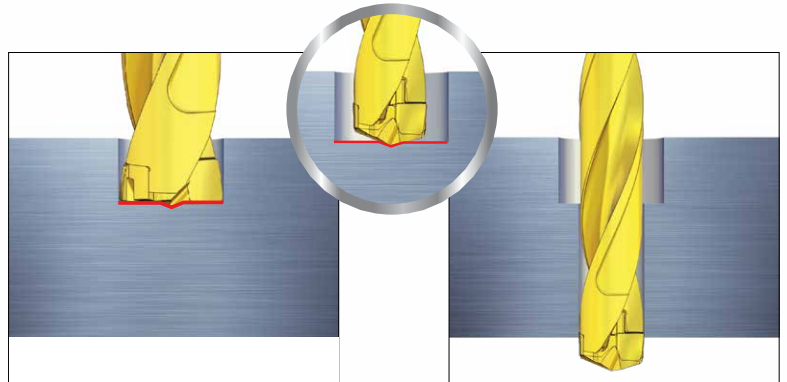
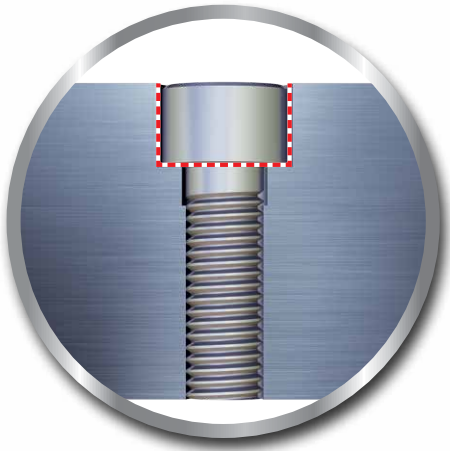
The new DRILLRUSH line minimizes flat bottom hole applications from a two step process to one for shortened cycle time. With reduced cycle time in mind, the new geometry is compatible with the DRILLRUSH's current line of bodies in the same size. Further benefits are excellent chip breaking and high precision flat surfaces.

Specifically for applications like bolt-hole machining that require a nearly flat bottom hole; this new geometry head is designed for machining on a wide range of work piece materials.



## Machining examples

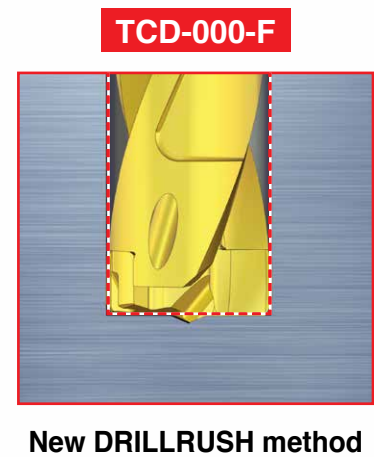
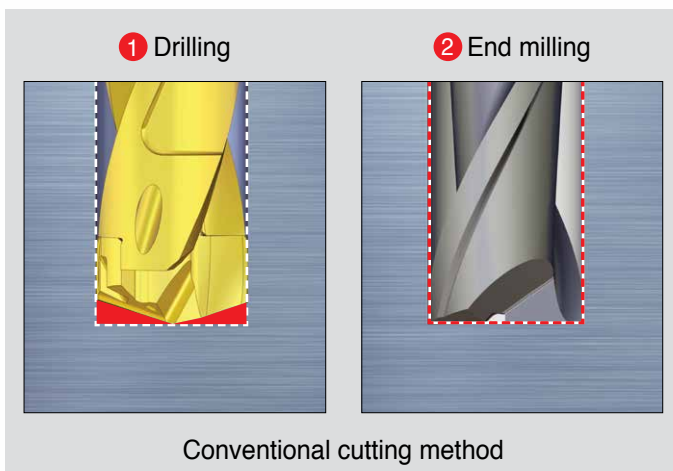
### 1. Counter bored holes for socket head cap screws



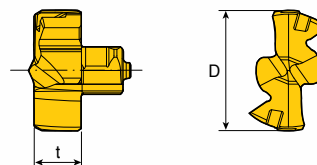
• Flat bottom hole for socket head

### 2. Flat bottom hole machining

Cycle time minimized credit to two processes reduced to one



## DRILLRUSH flat head



• Grade : TT9080

Designation	Dimension (mm)		Pocket size	Grade
	D	t		
<b>TCD- 080-F</b>	8	4.00	8	TT9080
<b>085-F</b>	8.5	4.00	8	TT9080
<b>090-F</b>	9	4.20	9	TT9080
<b>095-F</b>	9.5	4.20	9	TT9080
<b>100-F</b>	10	4.40	10	TT9080
<b>105-F</b>	10.5	4.40	10	TT9080
<b>110-F</b>	11	4.50	11	TT9080
<b>115-F</b>	11.5	4.50	11	TT9080
<b>120-F</b>	12	4.80	12	TT9080
<b>125-F</b>	12.5	4.80	12	TT9080
<b>130-F</b>	13	5.10	13	TT9080
<b>135-F</b>	13.5	5.10	13	TT9080
<b>140-F</b>	14	5.50	14	TT9080
<b>145-F</b>	14.5	5.50	14	TT9080
<b>150-F</b>	15	5.93	15	TT9080
<b>155-F</b>	15.5	5.93	15	TT9080
<b>160-F</b>	16	6.30	16	TT9080
<b>165-F</b>	16.5	6.30	16	TT9080
<b>170-F</b>	17	6.60	17	TT9080
<b>175-F</b>	17.5	6.60	17	TT9080
<b>180-F</b>	18	6.88	18	TT9080
<b>185-F</b>	18.5	6.88	18	TT9080
<b>190-F</b>	19	7.20	19	TT9080
<b>195-F</b>	19.5	7.20	19	TT9080
<b>200-F</b>	20	8.20	20	TT9080
<b>205-F</b>	20.5	8.20	20	TT9080
<b>210-F</b>	21	8.60	21	TT9080
<b>215-F</b>	21.5	8.60	21	TT9080
<b>220-F</b>	22	8.90	22	TT9080
<b>225-F</b>	22.5	8.90	22	TT9080
<b>230-F</b>	23	9.30	23	TT9080
<b>235-F</b>	23.5	9.30	23	TT9080
<b>240-F</b>	24	9.70	24	TT9080
<b>245-F</b>	24.5	9.70	24	TT9080
<b>250-F</b>	25	10.10	25	TT9080
<b>254-F</b>	25.4	10.10	25	TT9080
<b>255-F</b>	25.5	10.10	25	TT9080



## Recommended cutting conditions - According to DIN/ISO513 and VDI 3323

ISO	Material	Condition	Tensile strength Rm (N/mm <sup>2</sup> )	Hardness (HB)	Mtl. No.	Cutting speed Vc(m/min)	DRILLRUSH					
							Feed vs. Drill diameter (mm/rev)					
							D<10	D= 10-11.9	D= 12-13.9	D= 14-15.9	D= 16-19.9	D= 20-25.9
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C Annealed	420	125	1	80-110-140	0.12	0.15	0.18	0.20	0.25	0.25
		>=0.25%C Annealed	650	190	2	80-105-130						
		<0.55%C Quenched and tempered	850	250	3	80-100-120						
		>=0.55%C Annealed	750	220	4	70-90-110						
		Quenched and tempered	1000	300	5	50-70-90						
	Low alloy steel and cast steel (less than 5% of alloying elements)	Annealed	600	200	6	70-95-120	0.12	0.14	0.16	0.18	0.23	0.25
			930	275	7	70-90-110						
		Quenched and tempered	1000	300	8	50-70-90						
			1200	350	9	40-55-70						
	High alloy steel, cast steel and tool steel.	Annealed	680	200	10	50-70-90	0.12	0.12	0.15	0.18	0.20	0.22
Quenched and tempered		1100	325	11	40-60-80							
M	Stainless steel and cast steel	Ferritic / martensitic	680	200	12	40-55-70	0.10	0.12	0.14	0.16	0.16	0.18
		Martensitic	820	240	13	40-55-70	0.12	0.15	0.17	0.20	0.21	0.24
		Austenitic	600	180	14	30-50-70	0.15	0.18	0.20	0.24	0.26	0.30
K	Gray cast iron (GG)	Ferritic		160	15	90-125-160	0.15	0.20	0.25	0.30	0.35	0.35
		Pearlitic		250	16	80-110-140						
	Cast iron nodular (GGG)	Ferritic		180	17	90-135-180						
		Pearlitic		260	18	80-110-140						
	Malleable cast iron	Ferritic		130	19	90-125-160						
Pearlitic			230	20	80-110-140							
N	Aluminum - wrought alloy	Not cureable		60	21	90-155-220	0.20	0.25	0.30	0.35	0.40	0.45
		Cured		100	22	90-155-220						
	Aluminum-cast, alloyed	<=12% Si Not cureable		75	23	90-155-220						
		Cured		90	24	90-155-220						
	>12% Si	High temp.		130	25	80-120-160						
		Free cutting		110	26	90-155-220						
	Copper alloys	Brass		90	27	90-155-220						
		Electrolitic copper		100	28	90-155-220						
	Non-metallic	Duroplastics, fiber plastics			29							
		Hard rubber			30							
S	High temp. alloys	Fe based Annealed		200	31	30-45-60	0.06	0.08	0.10	0.12	0.12	0.14
		Cured		280	32	20-35-50						
		Ni or Annealed		250	33	20-35-50						
		Cu based Cured		350	34	20-35-50						
		Cast		320	35	20-35-50						
	Titanium, Ti alloys		RM400	36	20-35-50							
	Alpha+beta alloys cured	RM1050	37	20-35-50								
H	Hardened steel	Hardened		55HRC	38	20-35-50	0.06	0.08	0.10	0.12	0.14	0.16
		Hardened		60HRC	39	20-35-50						
	Chilled cast iron	Cast		400	40							
	Cast iron nodular	Hardened		55HRC	41							

\* For over 8xD, please reduce the cutting condition.

\* For more information of material groups, see the TaeguTec concise catalogue "Material conversion Table" section.

■ Steel   
 ■ Stainless steel   
 ■ Cast iron   
 ■ Nonferrous   
 ■ High temp. alloys   
 ■ Hardened steel